

## **CASE STUDY MATERIALS**

### **MUNICIPAL CREDIT ANALYSIS SEMINAR APRIL 1998**

Prepared for



East European Regional Housing Sector Assistance Project  
Project 180-0034  
U.S. Agency for International Development, ENI/EEUD/UDH  
Contract No. EPE-C-00-95-001100-00, RFS No. 404

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April 1998  
UI Project 06610-404

**CITY A**

## **NARRATIVE CITY A**

City A is applying to your bank for a credit of 8 million Kcs, to be repaid over 10 years at an interest rate of 13%. If granted, the loan will have annual principal repayments of 800 thousand Kcs beginning in June 1999. The purpose of the loan is to finance a major upgrading of the city water supply. The city water system has provided an adequate volume of piped water to all city residents from three municipal wells. However, testing of water quality in 1997 revealed that two of the city's wells were contaminated by the seepage of sewage. Therefore, in 1997, planning was completed on a new well, a water treatment plant, and connections to the city water distribution system. This project has been assigned a top priority by the city council. The total cost of the project is estimated at 12 million Kcs, and a state subsidy for 4 million Kcs. has been approved by the State Environmental Fund for part of the cost. City A had a population of 2700 persons in 1997, and population is expected to remain stable in future years.

City A has provided, in Exhibit 1, a budget for 1998, along with actual financial results for 1993-1997. The 1998 budget includes investment expenditures of 12 million Kcs. to complete the project. As indicated by the Economic Results, without this credit, the budget shows a deficit of 7.406 million Kcs.

As part of your analysis, you have learned that the city also has 2 million Kcs in outstanding debt from an earlier loan granted by a competitor bank in 1994 for a heating plant project. This loan is scheduled to be fully repaid in 1999, and all payments to date have been in full and on time. The amortization schedule for this loan is in Exhibit 2. You also learn that the SEF grant is repayable financial assistance, at zero interest. According to the terms, the principal on the SEF grant is scheduled to be repaid in four installments beginning in 2002. See Exhibit 3. You have prepared in Exhibit 4 an amortization schedule for the proposed credit, with annual payments of principal beginning in 1999 and interest extending from 1998 to 2008. The consolidated debt service schedule is in Exhibit 5.

Further, you have revised the budget for 1998 to include the credit of 8 million Kcs. as an item of revenue, and you have adjusted expenditures to include the estimated 1998 payment of interest. This revised budget is in Exhibit 6.

Based on the information available, you decide to first undertake an analysis of the past financial performance of City A and an initial assessment of the burden of future debt service.

**Exhibit 1**  
**Financial Information for City A**  
(1998 Version 11)  
(All amounts in thousands of Kc)

REVENUES	Actual 1993	Actual 1994	Actual 1995	Actual 1996	Actual 1997	Budget 1998 (Before New Credit)
Revenues from RO, PO	5 001	6 251	7 814	8 205	8 287	8 370
<b>Total Tax Revenues</b>	<b>5 242</b>	<b>8 504</b>	<b>11 474</b>	<b>10 504</b>	<b>10 210</b>	<b>10 053</b>
-Income Tax of natural person from dependent activity	2 902	3 629	5 467	2 767	3 044	3 105
-Income Tax of natural persons from business	0	2 259	1 773	1 186	901	900
-Corporate Income Tax	0	0	1 589	3 900	3 315	3 249
-Property Tax	1 623	1 815	1 727	1 731	1 956	1 900
-Administrative Fees	717	801	917	920	994	900
-Tax Corrections	0	0	1	0	0	0
<b>Total Local Fees &amp; Other Revenues</b>	<b>10 365</b>	<b>1 239</b>	<b>781</b>	<b>686</b>	<b>643</b>	<b>330</b>
-Local Fees	412	469	326	416	330	330
-Revenues from property sales	7 968	0	0	0	0	0
-Other and Random Revenues	1 985	770	455	270	313	0
<b>State Subsidies</b>	<b>2 986</b>	<b>5 729</b>	<b>2 710</b>	<b>4 245</b>	<b>3 996</b>	<b>7 104</b>
-Total General Subsidies	2 583	5 729	2 710	3 132	3 104	3 104
-Extraordinary & special purpose subsidies	403	0	0	1 113	892	4 000
<b>Transfers from All Sources</b>	<b>2 857</b>	<b>5 560</b>	<b>3 500</b>	<b>4 101</b>	<b>4 100</b>	<b>1 500</b>
-Transfers from Reserves	2 857	5 560	3 500	4 101	4 100	1 500
-Transfers from Joint Resources	0	0	0	0	0	0
-Other Transfers	0	0	0	0	0	0
<b>Credits and municipal bonds</b>	<b>0</b>	<b>5 000</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
-Accepted Credits	0	5 000	0	0	0	0
-Municipal bonds	0	0	0	0	0	0
<b>Total Revenues</b>	<b>26 451</b>	<b>32 283</b>	<b>26 279</b>	<b>27 741</b>	<b>27 236</b>	<b>27 357</b>

EXPENDITURES	Actual 1993	Actual 1994	Actual 1995	Actual 1996	Actual 1997	Budget 1998 (Before New Credit)
<b>Operating Expenditures of Budgetary Organizations</b>	<b>12 986</b>	<b>17 257</b>	<b>18 053</b>	<b>18 464</b>	<b>18 231</b>	<b>19 598</b>
-Salaries and other personnel expenses	1 470	2 059	1 930	2 461	2 707	2 910
-Other Expenditures	11 516	15 198	16 123	16 003	15 524	16 688
<b>Operating Subsidies to Contributory Organizations and State Firms</b>	<b>212</b>	<b>360</b>	<b>1 073</b>	<b>1 935</b>	<b>3 077</b>	<b>2 000</b>
<b>Total Operating Expenditures</b>	<b>13 198</b>	<b>17 617</b>	<b>19 126</b>	<b>20 399</b>	<b>21 308</b>	<b>21 598</b>
<b>Investment Expenditures of Budgetary Organizations</b>	<b>7 651</b>	<b>12 680</b>	<b>5 400</b>	<b>5 900</b>	<b>4 500</b>	<b>12 000</b>
<b>Investment Subsidies to Contributory Organizations and State Firms</b>	<b>0</b>	<b>1 086</b>	<b>65</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Total Investment Expenditures</b>	<b>7 651</b>	<b>13 766</b>	<b>5 465</b>	<b>5 900</b>	<b>4 500</b>	<b>12 000</b>
-Payments of principal	0	0	1 000	1 000	1 000	1 000
-Payments of interest	0	275	495	385	275	165
<b>Total Debt Service</b>	<b>0</b>	<b>275</b>	<b>1 495</b>	<b>1 385</b>	<b>1 275</b>	<b>1 165</b>
<b>Total Expenditures</b>	<b>20 849</b>	<b>31 658</b>	<b>26 086</b>	<b>27 684</b>	<b>27 083</b>	<b>34 763</b>
<b>Economic Results</b>	<b>5 602</b>	<b>625</b>	<b>193</b>	<b>57</b>	<b>152</b>	<b>-7 406</b>

Note: Operating Expenditures do not include debt service

**Exhibit 2**  
**Schedule of Debt Service on**  
**1994 Credit of 5 Million Kc**  
**for City A**  
**(Version 11)**

(all amounts in thousands of Kc)

Year	Principal Outstanding, Beginning of Period	New Credits Accepted	Scheduled Principal Payments	Scheduled Interest Payments	Scheduled Total Debt Service	Outstanding Principal, End of Period
1994	0	5000	0	275	275	5 000
1995	5 000		1 000	495	1 495	4 000
1996	4 000		1 000	385	1 385	3 000
1997	3 000		1 000	275	1 275	2 000
1998	2 000		1 000	165	1 165	1 000
1999	1 000		1 000	55	1 055	0
2000	0		0	0	0	0
2001	0		0	0	0	0
2002	0		0	0	0	0
2003	0		0	0	0	0
2004	0		0	0	0	0
2005	0		0	0	0	0
2006	0		0	0	0	0
2007	0		0	0	0	0
2008	0		0	0	0	0

Zdena,

I have assumed that the loan was granted in 1994, with loan terms calling for annual principal payments and interest at 11%, with a final maturity in 1999. I have also assumed that interest is paid every 6 months, beginning in December 1994, and principal is paid on June 30 each year.

**Exhibit 3**  
**Schedule of Debt Service on**  
**1998 SEF Loan of 4 Million Kc**  
**for City A**  
**(Version 11)**

(all amounts in thousands of Kc)

Year	Principal Outstanding, Beginning of Period	New Credits Accepted	Scheduled Principal Payments	Scheduled Interest Payments	Scheduled Total Debt Service	Outstanding Principal, End of Period
1994						
1995						
1996						
1997						
1998		4 000	0	0	0	4 000
1999	4 000	0	0	0	0	4 000
2000	4 000	0	0	0	0	4 000
2001	4 000	0	0	0	0	4 000
2002	4 000	0	1 000	0	1 000	3 000
2003	3 000	0	1 000	0	1 000	2 000
2004	2 000	0	1 000	0	1 000	1 000
2005	1 000	0	1 000	0	1 000	0
2006	0	0	0	0	0	0
2007	0	0	0	0	0	0
2008	0	0	0	0	0	0

Zdena,

I have assumed that the SEF loan was granted in 1998, with loan terms calling for zero interest, a 3 year grace period before principal repayment, and equal principal payments for 4 years beginning in 2002.

**Exhibit 4**  
**Schedule of Debt Service on**  
**1998 Credit of 8 Million Kc**  
**for City A**

(Version 11)

(all amounts in thousands of Kc)

Year	Principal Outstanding, Beginning of Period	New Credits Accepted	Scheduled Principal Payments	Scheduled Interest Payments	Scheduled Total Debt Service	Outstanding Principal, End of Period
1994						
1995						
1996						
1997						
1998		8 000	0	520	520	8 000
1999	8 000	0	800	988	1 788	7 200
2000	7 200	0	800	884	1 684	6 400
2001	6 400	0	800	780	1 580	5 600
2002	5 600	0	800	676	1 476	4 800
2003	4 800	0	800	572	1 372	4 000
2004	4 000	0	800	468	1 268	3 200
2005	3 200	0	800	364	1 164	2 400
2006	2 400	0	800	260	1 060	1 600
2007	1 600	0	800	156	956	800
2008	800	0	800	52	852	0

Zdena,

I have assumed that the loan was granted in 1998, with loan terms calling for annual principal payments and interest at 13%, with a final maturity in 2008. I have also assumed that interest is paid every 6 months, beginning in December 1998, and principal is paid on June 30 each year.

**Exhibit 5**  
**Consolidated Schedule of Debt Service on**  
**Outstanding and Proposed Credits and Loans**  
**for City A**  
**(Version 11)**

(all amounts in thousands of Kc)

<b>Year</b>	<b>Principal Outstanding, Beginning of Period</b>	<b>New Credits Accepted</b>	<b>Scheduled Principal Payments</b>	<b>Scheduled Interest Payments</b>	<b>Scheduled Total Debt Service</b>	<b>Outstanding Principal, End of Period</b>
1994	0	5000	0	275	275	5000
1995	5000	0	1000	495	1495	4000
1996	4000	0	1000	385	1385	3000
1997	3000	0	1000	275	1275	2000
1998	2000	12000	1000	685	1685	13000
1999	13000	0	1800	1043	2843	11200
2000	11200	0	800	884	1684	10400
2001	10400	0	800	780	1580	9600
2002	9600	0	1800	676	2476	7800
2003	7800	0	1800	572	2372	6000
2004	6000	0	1800	468	2268	4200
2005	4200	0	1800	364	2164	2400
2006	2400	0	800	260	1060	1600
2007	1600	0	800	156	956	800
2008	800	0	800	52	852	0



**Exhibit 6**  
**Financial Information for City A**  
After Proposed Credit of 8 million Kc  
(All amounts in thousands of Kc)  
(1998 Version 11)

REVENUES	Actual 1993	Actual 1994	Actual 1995	Actual 1996	Actual 1997	Budget 1998 (After New Credit)
Revenues from RO, PO	5 001	6 251	7 814	8 205	8 287	8 370
<b>Total Tax Revenues</b>	<b>5 242</b>	<b>8 504</b>	<b>11 474</b>	<b>10 504</b>	<b>10 210</b>	<b>10 053</b>
-Income Tax of natural person from dependent activity	2 902	3 629	5 467	2 767	3 044	3 105
-Income Tax of natural persons from business	0	2 259	1 773	1 186	901	900
- Corporate Income Tax	0	0	1 589	3 900	3 315	3 249
-Property Tax	1 623	1 815	1 727	1 731	1 956	1 900
-Administrative Fees	717	801	917	920	994	900
-Tax Corrections	0	0	1	0	0	0
<b>Total Local Fees &amp; Other Revenues</b>	<b>10 365</b>	<b>1 239</b>	<b>781</b>	<b>686</b>	<b>643</b>	<b>330</b>
-Local Fees	412	469	326	416	330	330
-Revenues from property sales	7 968	0	0	0	0	0
-Other and Random Revenues	1 985	770	455	270	313	0
<b>State Subsidies</b>	<b>2 986</b>	<b>5 729</b>	<b>2 710</b>	<b>4 245</b>	<b>3 996</b>	<b>7 104</b>
-Total General Subsidies	2 583	5 729	2 710	3 132	3 104	3 104
-Extraordinary & special purpose subsidies	403	0	0	1 113	892	4 000
<b>Transfers from All Sources</b>	<b>2 857</b>	<b>5 560</b>	<b>3 500</b>	<b>4 101</b>	<b>4 100</b>	<b>1 500</b>
-Transfers from Reserves	2 857	5 560	3 500	4 101	4 100	1 500
-Transfers from Joint Resources	0	0	0	0	0	0
-Other Transfers	0	0	0	0	0	0
<b>Credits and municipal bonds</b>	<b>0</b>	<b>5 000</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8 000</b>
-Accepted Credits	0	5 000	0	0	0	8 000
-Municipal bonds	0	0	0	0	0	0
<b>Total Revenues</b>	<b>26 451</b>	<b>32 283</b>	<b>26 279</b>	<b>27 741</b>	<b>27 236</b>	<b>35 357</b>

EXPENDITURES	Actual 1993	Actual 1994	Actual 1995	Actual 1996	Actual 1997	Budget 1998 (After New Credit)
<b>Operating Expenditures of Budgetary Organizations</b>	<b>12 986</b>	<b>17 257</b>	<b>18 053</b>	<b>18 464</b>	<b>18 231</b>	<b>19 598</b>
-Salaries and other personnel expenses	1 470	2 059	1 930	2 461	2 707	2 910
-Other Expenditures	11 516	15 198	16 123	16 003	15 524	16 688
<b>Operating Subsidies to Contributory Organizations and State Firms</b>	<b>212</b>	<b>360</b>	<b>1 073</b>	<b>1 935</b>	<b>3 077</b>	<b>2 000</b>
<b>Total Operating Expenditures</b>	<b>13 198</b>	<b>17 617</b>	<b>19 126</b>	<b>20 399</b>	<b>21 308</b>	<b>21 598</b>
<b>Investment Expenditures of Budgetary Organizations</b>	<b>7 651</b>	<b>12 680</b>	<b>5 400</b>	<b>5 900</b>	<b>4 500</b>	<b>12 000</b>
Investment Subsidies to Contributory Organizations and State Firms	0	1 086	65	0	0	0
<b>Total Investment Expenditures</b>	<b>7 651</b>	<b>13 766</b>	<b>5 465</b>	<b>5 900</b>	<b>4 500</b>	<b>12 000</b>
-Payments of principal	0	0	1 000	1 000	1 000	1 000
-Payments of Interest	0	275	495	385	275	685
<b>Total Debt Service</b>	<b>0</b>	<b>275</b>	<b>1 495</b>	<b>1 385</b>	<b>1 275</b>	<b>1 685</b>
<b>Total Expenditures</b>	<b>20 849</b>	<b>31 658</b>	<b>26 086</b>	<b>27 684</b>	<b>27 083</b>	<b>35 283</b>
<b>Economic Results</b>	<b>5 602</b>	<b>625</b>	<b>193</b>	<b>57</b>	<b>152</b>	<b>74</b>

Note: Operating Expenditures do not include debt service

**1998 Version 11 of City A**  
**Worksheet #1**  
**Separating Recurring Revenue from Non-Recurring Revenue**  
(Prior to Proposed Credit of 8 million Kc)

	Actual 1993	Actual 1994	Actual 1995	Actual 1996	Actual 1997	Budget 1998
<b>Recurring Revenues:</b>						
<b>National Tax Revenues</b>						
Income Tax of natural person from dependent activity	2 902	3 629	5 467	2 767	3 044	3 105
Income Tax of natural persons from business	0	2 259	1 773	1 186	901	900
Corporate Income Tax	0	0	1 589	3 900	3 315	3 249
<b>Total National Tax Revenues (=1+2+3)</b>	2 902	5 888	8 829	7 853	7 260	7 253
<b>State Operating Subsidies</b>						
Total General Subsidies	2 583	5 729	2 710	3 132	3 104	3 104
<b>Local Revenues</b>						
Revenues from RO, PO	5 001	6 251	7 814	8 205	8 287	8 370
Property Tax	1 623	1 815	1 727	1 731	1 956	1 900
Administrative Fees	717	801	917	920	994	900
Tax Corrections	0	0	1	0	0	0
Local Fees	412	469	326	416	330	330
<b>Total Local Revenues (=6+7+8+9+10)</b>	7 753	9 336	10 785	11 272	11 566	11 500
<b>Total Recurring Revenues (=4+5+11)</b>	13 238	20 953	22 324	22 257	21 931	21 857

<b>Non-Recurring Revenue:</b>						
Revenues from property sales	7 968	0	0	0	0	0
Other and Random Revenues	1 985	770	455	270	313	0
Extraordinary & special purpose subsidies	403	0	0	1 113	892	4 000
Transfers from All Sources	2 857	5 560	3 500	4 101	4 100	1 500
<b>Total Non-Recurring Revenue (=12+13+14+15)</b>	13 213	6 330	3 955	5 484	5 305	5 500

<b>Credits and Municipal Bonds</b>	0	5000	0	0	0	0
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<b>Total Revenues (=12+17+18)</b>	26 451	32 283	26 279	27 741	27 236	27 357
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**1998 Version 11 of City A**  
**Worksheet #2**  
**The Concept of Net Operating Surplus (Deficit)**

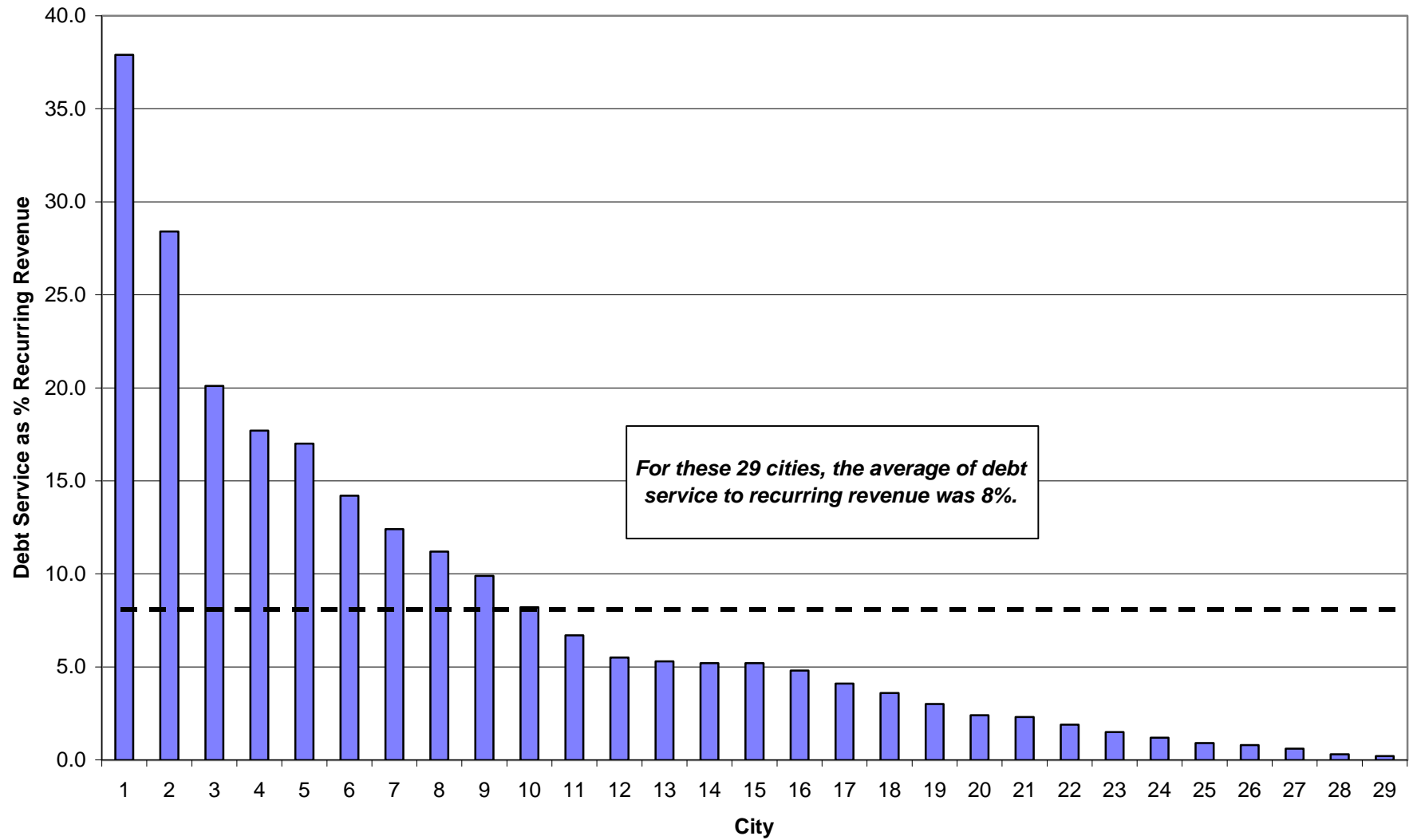
	<b>Actual 1993</b>	<b>Actual 1994</b>	<b>Actual 1995</b>	<b>Actual 1996</b>	<b>Actual 1997</b>	<b>Budget 1998</b>
<b>Recurring Revenues:</b>						
1 <b>Total National Tax Revenues</b>	2 902	5 888	8 829	7 853	7 260	7 253
2 <b>Total General Subsidies</b>	2 583	5 729	2 710	3 132	3 104	3 104
3 <b>Total Local Revenues</b>	7 753	9 336	10 785	11 272	11 566	11 500
4 <b>Total Recurring Revenues (=1+2+3)</b>	13 238	20 953	22 324	22 257	21 931	21 857
<b>Less</b>						
5 <b>Operating Expenditures (*)</b>	13 198	17 617	19 126	20 399	21 308	21 598
<b>Equals</b>						
6 <b>Net Operating Surplus (=4-5)</b>	40	3 336	3 198	1 858	622	259

(\*) Note: For the purpose of calculating the net operating surplus, debt service (if any) should not be included in operating expenditures

**Worksheet #3**  
**Summary Measures of City A Financial Performance**  
**1998 Version 11**

	Actual 1993	Actual 1994	Actual 1995	Actual 1996	Actual 1997	Budget 1998
<b>Key Revenue Indicators:</b>						
1 Recurring Revenues/Total Revenues	50.0%	64.9%	84.9%	80.2%	80.5%	79.9%
2 National Tax Revenues/Recurring Revenues	21.9%	28.1%	39.5%	35.3%	33.1%	33.2%
3 Local Revenues/Recurring Revenues	58.6%	44.6%	48.3%	50.6%	52.7%	52.6%
4 Property Sales/Total Revenues	30.1%	0.0%	0.0%	0.0%	0.0%	0.0%
5 Net Operating Surplus/Recurring Revenues	0.3%	15.9%	14.3%	8.3%	2.8%	1.2%
6 Net Operating Surplus/National Tax Revenues	1.4%	56.7%	36.2%	23.7%	8.6%	3.6%
<b>Key Spending Indicators</b>						
7 Total Expenditures per Capita	7 722	11 725	9 661	10 253	10 031	12 875
8 Total Operating Expenditures per Capita	4 888	6 525	7 084	7 555	7 892	7 999
<b>Key Indicators of Debt Service Burden</b>						
9 Debt Service/Recurring Revenues	0.0%	1.3%	6.7%	6.2%	5.8%	5.3%
10 Debt Service/Total Revenues	0.0%	0.9%	5.7%	5.0%	4.7%	4.3%
11 Debt Service Coverage Ratio (= Net Operating Surplus/Debt Service)	0.00	12.13	2.14	1.34	0.49	0.22

**Annual Debt Service as a Percent of Recurring Revenue for a Sample of 29 Czech Cities**



**Worksheet 4 (version 11)**  
**An Overall Risk Assessment for City A**  
**Relative to Selected Benchmarks**

Indicator	Value for City A					Benchmarks		Risk Assessment for City X	
	1995	1996	1997	1998		Strong	Weak	Status 1998	Trend (1995-1998)
1 Net Operating Surplus as a Percent of Recurring Revenue	14.3%	8.3%	2.8%	1.2%		> +7%	< +2%	W	D
2 Recurring Revenues as a Percent of Total Revenues	84.9%	80.2%	80.5%	79.9%		>66%	<50%	S	D
3 National Tax Revenues as a Percent of Recurring Revenues	39.5%	35.3%	33.1%	33.2%		<50%	>75%	S	S/I
4 Total Expenditures Per Capita ( Kc)	9 661	10 253	10 031	12 875		<9 130	>11 159	W	D
5 Debt Service Coverage Ratio	2.14	1.34	0.49	0.22		>2.0	<1.1	W	D

Legend:

Status

W

Weak

A

Acceptable

S

Strong

Trend

D

Deteriorating

S

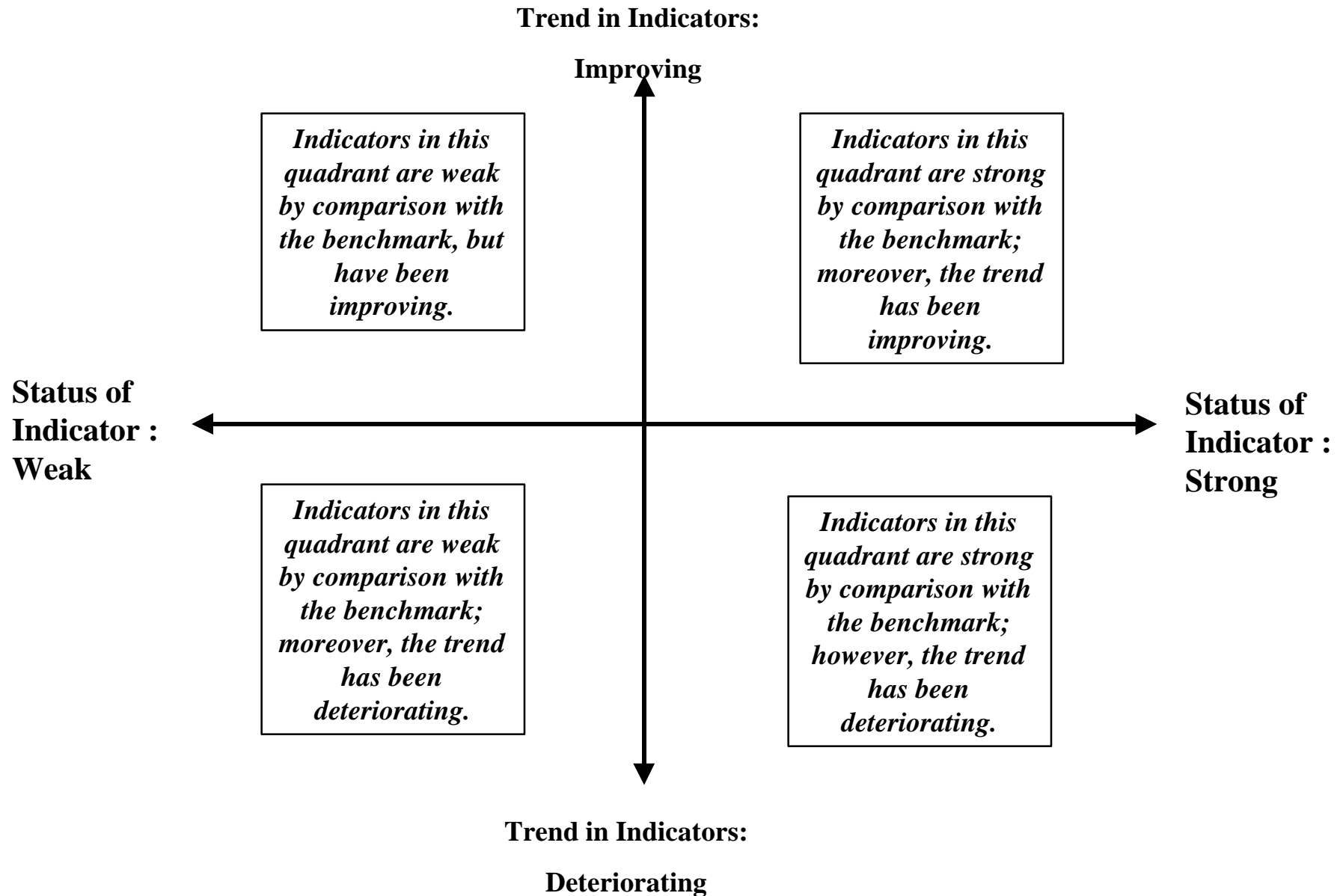
Stable

I

Improving

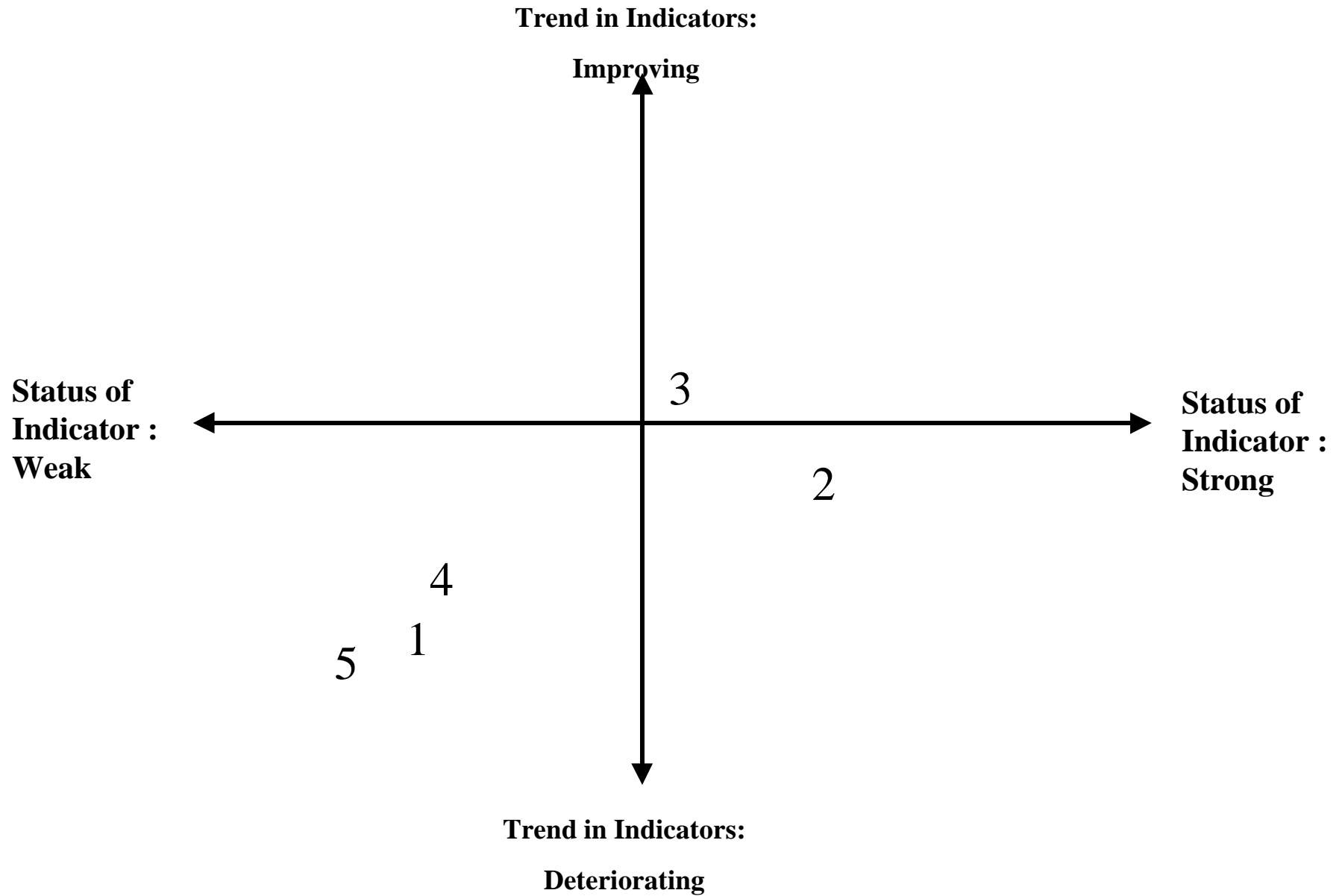
## Exhibit 5 a

### A Risk Assessment Matrix for City A



## Exhibit 5 b

### A Risk Assessment Matrix for City A





**Worksheet 5**  
**City A**  
**Evaluating the Burden of Future Debt Service**  
**From the Proposed 1998 Credit of 8 million Kc**  
**Version 11**

Year	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Debt Service (from Exhibit 5)	1 685	2 843	1 684	1 580	2 476	2 372	2 268	2 164	1 060	956	852
Coverage of Future Debt Service By 1998 Budgeted Net Operating Surplus (Worksheet 2: 259 Kc)	0.15	0.09	0.15	0.16	0.10	0.11	0.11	0.12	0.24	0.27	0.30
Future Debt Service as % of 1998 Recurring Revenues (Worksheet 2 : 21 857 Kc)	7.7%	13.0%	7.7%	7.2%	11.3%	10.9%	10.4%	9.9%	4.8%	4.4%	3.9%

## **TEACHING AND PRESENTATION NOTES FOR THE CITY A CASE STUDY**

The following notes are provided as a guide for the presentation and discussion of City A. While these notes are designed to be comprehensive, the presenters may choose to emphasize selected points and to dismiss other points. These notes are only a guide; presenters are expected to develop the method and style of presentation and discussion that is most effective for their intended purpose. It is anticipated that this case will follow one or two earlier presentations – an introduction to municipal finance and an overview of the assessment of municipal credit risk. (It is suggested that Exhibit 1 in the case could be used as a vehicle to discuss municipal finances and budgets.)

City A represents a straightforward case study that demonstrates the basics of municipal credit analysis. The narrative can be used to introduce the project and the funding needs. It is appropriate to use the narrative to point out that this is an essential purpose project, and it is, therefore, in the city's interests meet bank criteria for the granting of this loan.

### **EXHIBIT 1**

As noted above, Exhibit 1 could be used earlier to discuss issues in the structure of municipal budgets, revenue sources, and central government tax policy. Among the factors that could be highlighted and discussed:

- ! Revenues from RO,PO grew by 25% annually in 1994 and 1995, by only 5% in 1996 and by 1% in 1997, 1998. What could account for the slower growth?
- ! Total tax revenues grew by 62% in 1994, 35% in 1995; total taxes decline by 8.5% in 1996, 2.8% in 1997, and 1.5% in 1998. The role of changing central government policy and economic slowdown can be discussed as factors. The 1996 change in central government tax allocations can be discussed, as well as the role of the government in reducing the 1997 allocations.
- ! Total local revenues have steadily declined especially revenue from property sales. It could be noted that sales of property reduce the collateral available for securing loans.
- ! The changing role of state subsidies can also be noted.
- ! It can be noted that the city did borrow 5 million Kc in 1994; the repayment experience of this loan is relevant in assessing the risk of the new loan. Prompt payment is one measure of the city's willingness to pay.

- ! It is important to note that operating expenses have grown at a faster rate in each year than total revenues. This is a concern for credit analysts, since it questions the willingness and/or ability of the city to control spending when revenues decline.
- ! Investment spending has been ongoing, but 'lumpy' with large expenditures in 1994 and in 1998 (the current project). The 'lumpiness' of investment spending is normal — some infrastructure projects are inherently costly. These projects are appropriately funded through long-term debt . By using future revenues to repay the debt, future generations are, in effect, paying as they use the facilities.

## EXHIBITS 2-5

- ! Exhibit 2 points out that the city has met its' past debt service obligations in full and on time; it also points out that the loan will be fully repaid in 1999.
- ! Exhibit 3 presents the terms of the SEF 0% interest loan. It is noteworthy that the principal amortization does not begin until 2002.
- ! Exhibit 4 presents the proposed loan terms for the bank loan — an interest rate of 13% and equal principal payments for 10 years.
- ! Exhibit 5 presents the consolidated debt service schedule, assuming that all loans are granted. This is an important exhibit because it points out that annual debt service will nearly double in 1999. After declining in 2000 and 2001, debt service then jumps up again. For our purpose, we will focus on the maximum future debt service.

## EXHIBIT 6

This needs little discussion; it merely presents the revised budget assuming that the loan is granted. In addition to adding 'revenues', it also adds debt service.

## WORKSHEET 1

This worksheet is important. We 'repackage' the financial statements, dividing revenues into RECURRING REVENUE and NON-RECURRING REVENUE (one-shots). Recurring revenues are sources that, under existing national laws or municipal authorization, will produce revenues year-in and year-out. It can be noted, however, that the amount of revenue is not certain because laws may change or economic conditions



may affect revenue yields. Non-recurring revenues, often called one-shots, are items that cannot be counted on to produce revenues year-in, year-out (an example is revenue from sales of property).

One of the key points of this seminar is that the best single measures of credit risk relate recurring revenues to debt service and operating expenditures. The risk in municipal lending is that future cash flow will be insufficient to pay future debt service; analyzing recurring revenues best assesses this risk.

For City A, we can note that recurring revenues have been declining slightly since 1995. We can also note that national tax revenues have declined by more than 1.5 million Kc, but the city has been able to offset this decline with an increase in local revenues. Other items that can be discussed include the role of transfers as non-recurring revenue, and the ability of the city to control revenues from RO,PO.

## **WORKSHEET 2**

This worksheet is also important because it introduces the concept of the NET OPERATING SURPLUS. Here, we relate recurring revenues to operating expenses other than debt service. These expenses are the recurring, year-in, year-out costs of delivering governmental services. The net operating surplus is the excess of recurring revenue over operating expenses and it is the source of the cash flow used to pay debt service in our methodology.

For City A, net operating surplus has been declining since 1994. This is a negative trend. A declining NOS indicates that the debt capacity of the city is decreasing. A negative NOS is even more ominous; it means that the city is relying on non-recurring revenues to meet day-to-day operating expenses. By contrast, a positive and growing NOS can be used for infrastructure investment, or debt service.

## **WORKSHEET 3**

Worksheet 3 is important in that it summarizes the mass of financial information with a small number of relevant indicator ratios. These ratios are designed to help us understand the structure and interrelationships of key revenue and expenditure items. These ratios are signals of credit quality and can be used to monitor trends in financial performance and compare performance among cities. A caveat is necessary, however. Even though a specific ratio may be demonstrating a positive or negative trend, it is always important to analyze the fundamental underpinnings of the ratio and understand whether changes are really positive or negative.

### Comments on Specific Ratios:

1. A large and growing ratio is favorable; conversely, a low or declining ratio is negative.
2. It is difficult to interpret this ratio. On the one hand, higher is better when the economy is growing because this will generate more revenue. On the other hand, high levels mean that the city is very vulnerable to changes in central government tax allocations and to a declining economy. It is important to follow trends and to relate these trends to other indicators to determine whether the impact is on balance positive or negative.
3. Everything else being equal, cities with high ratios and rising ratios here are less risky since most of their recurring revenues are under their control.
4. Sales of property represent a non-recurring revenue; therefore it is a negative indicator if this ratio is high or recurring.
5. Along with indicator 6, this ratio is an important indicator of debt capacity. A surplus that is consistently in the 5-10% range is viewed as very favorable from the standpoint of credit risk. A surplus that is too high is likely to be unsustainable, and a surplus that is below 5% indicates that the city has a small margin for unexpected shortfalls in revenues or spending increases. City A is evidencing a negative trend.
6. See 5.
7. See 8 below.
8. Trends in per capita spending relative to revenue trends can be important indicators of the city's willingness to live within its means. Here, the growing level of operating expenses per capita is negative, especially in light of the declining recurring revenues. As noted above, one consequence of the continued growth in spending is a declining debt capacity as measured by the ratio of net operating surplus to recurring revenues.
9. This ratio, and ratio 11, are the most important and direct measures of credit risk and debt capacity. For ratio 9, a ratio of debt service to recurring revenues that exceeds 10% is an indicator of growing credit risk.
10. This ratio is less important than 9 or 11.



11. This ratio is the single most important indicator of credit risk. It measures the coverage of debt service from current, recurring cash flows after operating expenses have been deducted. This coverage ratio is so important that specific levels of coverage are often included as covenants in loan agreements, obligating cities to achieve target minimum levels of coverage. A widely used target is coverage of 1.25 – i.e., a level of net operating surplus that is 1.25 times debt service.

## CHART 1

This chart is useful in providing some perspective for analyzing the ratio of debt service to recurring revenues. Given the benchmark of 10% as a negative indicator, it is relevant to note that, on average the 29 cities in this study fall below the benchmark. This is only one indication, based on a small sample, that municipal borrowing may not be a pervasive problem. On the other hand, there are eight cities that have ratios above 10%, and one city that has a ratio of 37.9%.

## WORKSHEET 4

It is the credit analyst's task to combine information from a variety of sources and indicators and determine the overall risk/reward tradeoffs from a proposed credit. One approach is to relate selected key indicators to benchmarks of strong or weak performance. Ideally, these benchmarks would be derived from many years of experience in municipal lending. Absent a long history of such experience, benchmarks can be established based on the experiences of lenders in other markets (e.g., the US municipal credit market) or through analytical research or intuitive appeal. The benchmarks presented here are not comprehensive, and analysts are encouraged to develop their own benchmarks. The intent here is too simply present a framework for assessing the overall risk of one municipal credit. Worksheet 4 points out a common dilemma faced by analysts: the information used presents both positive and negative aspects. Thus, ratios 1,4,5 have a negative status in 1998, while ratios 2,3 are positive. It is this mix of positive and negative information that forces analysts to the risk/reward tradeoffs.

## EXHIBIT 5A, 5B

The risk assessment matrix (as well as the benchmarks) is designed to provide a close and direct link to the computer model. But, the risk assessment matrix (RAM) has other objectives as well. The RAM has become a particularly effective way to promote more active and direct involvement of the participants in the discussion of the cases. The RAM provides an explicit and visual representation of the tradeoffs that are common in credit analysis. The RAM focuses participants' attention and discussion on their

perceptions of which indicators (or mix of indicators) are most important in risk assessment, as well as providing a vehicle to consider the need for other loan covenants

## **WORKSHEET 6**

Worksheet 6 looks at the debt service coverage ratios by comparing future debt service to different measures of 1998 budgeted revenue. This focuses attention on the need for city A to generate more net operating surplus in future years, since the 1998 NOS is clearly inadequate. By relating future debt service to current revenue, we focus attention on the importance of future financial performance but we avoid the time required to explicitly analyze projections of financial data. We can consider using projections in the small group case discussion.

**CITY X**



## **NARRATIVE CITY X**

On January 10, 1998, representatives of City X request a loan from your bank for 20 million Kcs, to be paid over 10 years at an interest rate of 13%. The purpose of the loan is to provide a portion of the funds necessary to complete a new wastewater treatment plant and to extend the city sewer system to major portions of the city. At present, the wastewater system, which is operated by a joint stock company, serves only a small part of the city; and the existing treatment plant is very old and subject to periodic breakdowns. In order to comply with national requirements for wastewater treatment, the city began planning, in 1997, for an updated treatment plant and the extension of interceptor sewers to unserved portions of the city. Present plans call for construction to be completed by October 1999, with operation commencing shortly thereafter.

The overall project has an estimated cost of 84 million Kcs. Exhibit 1 presents a breakdown of the proposed investment and the anticipated sources of financing. The city has already spent 4 million Kcs (in 1997) for engineering studies, permits, and preliminary site development. The city is planning to spend an additional 49 million Kcs in 1998, and 31 million Kcs in 1999. The city has budgeted from its own sources 18 million Kcs for construction in 1998. (The city's budget is summarized in Exhibit 2.) This will be sufficient to finance construction through June. The State Environmental Fund has approved a subsidy of 21 million Kcs for this project and the city is planning to draw down 12 million Kcs in 1998, and the remainder in a second tranche in 1999. The SEF has also given tentative approval for a loan of 21 million Kcs. This loan would also be drawn down in two tranches as noted in Exhibit 1. The terms of this loan call for an interest rate of 3% and a final maturity in 2005.

As preliminary steps in your credit analysis, the city has supplied you (in Exhibit 2) with summary financial statements for 1995-1997 and the 1998 budget. The budget does not include investment spending of 31 million Kcs in the wastewater system since that spending depends on the SEF funding and the bank loan. Exhibit 3 provides the debt service schedule on the SEF loan; and Exhibit 4 provides the debt service schedule on the proposed bank loan. Exhibit 5 provides a consolidated debt service schedule.

The city has no outstanding debt, since previous investments have been financed from internal funds. However, you note that the proposed investment is substantially larger than all previous projects, and future debt service is projected at 8 million Kcs in 1999, and over 7 million Kcs through 2002. Therefore, you also request the city to supply projections for selected financial data on recurring revenues and operating expenditures for 1999-2008. These projections are provided in Exhibit 7.

Based on your preliminary analysis, you decide to focus on the ratio of debt service to recurring revenues and the debt service coverage ratio (to be calculated in Worksheet 2), and then on an analysis of the 1998 budget and the 1999-2005 projections.



Exhibit 1  
Schedule of Construction Outlays  
and Sources of Funds,  
City X  
Wastewater System

Schedule of Uses and Sources of Funds (All amounts in thousands of Kc)				
	1997	1998	1999	Total
<b>Uses of Funds</b>				
Engineering, Site Development, Permits	4,000	7,000	-	11,000
Construction of Interceptor Sewers and Treatment Plant	-	42,000	31,000	73,000
Total Uses	4,000	49,000	31,000	84,000
<b>Sources of Funds</b>				
City Own Sources	4,000	18,000	-	22,000
SEF Subsidy		12,000	9,000	21,000
SEF Loan		12,000	9,000	21,000
Bank Loan		7,000	13,000	20,000
Total Sources	4,000	49,000	31,000	84,000

**EXHIBIT 2**  
**Financial Information for City X**  
(Before Proposed Credit of 20 000 tis. Kc)  
(All amounts in thousands of Kc)

REVENUES	Actual 1995	Actual 1996	Actual 1997	Budget 1998 (Before New Credit)
<b>Total Tax Revenues</b>	<b>27 855</b>	<b>23 958</b>	<b>22 266</b>	<b>24 359</b>
-Income Tax of natural person from dependent activity	9 109	5 192	5 809	6 200
-Income Tax of natural persons from business	16 137	10 812	9 003	10 300
-Corporate Income Tax	0	5 147	4 662	4 800
-Administrative Fees	1 219	1 281	1 434	950
-Anvironmental and natural resources fees	0	0	10	100
-Local fees	196	274	342	1 009
-Property tax	1 194	1 252	1 006	1 000
-Other Tax Revenues	0	0	0	0
<b>Total Non Tax Revenues</b>	<b>5 575</b>	<b>5 061</b>	<b>4 973</b>	<b>8 155</b>
-Revenues from own activities	3 692	4 109	3 309	4 341
-Revenues from property lease	0	0	1 392	1 463
-Revenues from interest and fin. property realization	34	186	96	80
-Penalties	29	27	106	1 500
-Other and Random Revenues	1 820	739	70	771
<b>Capital Revenues</b>	<b>8 140</b>	<b>6</b>	<b>1 884</b>	<b>2 410</b>
-Revenues from property sale	8 140	6	1 380	2 230
-Other capital revenues	0	0	504	180
<b>Subsidies</b>	<b>13 086</b>	<b>9 368</b>	<b>3 921</b>	<b>13 997</b>
-General Subsidies from State Budget	3 140	3 077	3 493	3 440
-Subsidies from State Funds, State&District Budget	7 974	6 136	0	10 357
-Subsidies from other Municipalities	1 972	155	428	200
<b>Revenues</b>	<b>54 656</b>	<b>38 393</b>	<b>33 044</b>	<b>48 921</b>

EXPENDITURES	Actual 1995	Actual 1996	Actual 1997	Budget 1998 (Before New Credit)
<b>Operating Expenditures</b>	<b>19 445</b>	<b>21 697</b>	<b>24 321</b>	<b>24 863</b>
-Salaries and other personnel expenses	5 590	6 030	8 834	9 440
-Other Expenditures	13 855	15 667	15 487	15 423
<b>Operating Subsidies to Contributory Organizations and other Firms</b>	<b>861</b>	<b>914</b>	<b>1 104</b>	<b>1 000</b>
<b>Other Operating Expenditures</b>			<b>3 871</b>	<b>731</b>
<b>Total Operating Expenditures</b>	<b>20 306</b>	<b>22 611</b>	<b>29 296</b>	<b>26 594</b>
<b>Investment Expenditures of Budgetary Organizations</b>	<b>25 670</b>	<b>23 768</b>	<b>5 694</b>	<b>21 500</b>
<b>Investment Subsidies to Contributory Organizations and other Firms</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Total Investment Expenditures</b>	<b>25 670</b>	<b>23 768</b>	<b>5 694</b>	<b>21 500</b>
-Payments of principal	0	0	0	0
-Payments of Interest	0	0	0	0
<b>Total Debt Service</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Total Expenditures</b>	<b>45 976</b>	<b>46 379</b>	<b>34 990</b>	<b>48 094</b>
<b>Economic Results</b>	<b>8 680</b>	<b>-7 986</b>	<b>-1 946</b>	<b>827</b>
<b>Financing</b>	<b>-8 680</b>	<b>7 986</b>	<b>1 946</b>	<b>- 827</b>
Short-term Financing - own reserves	-8 680	7 986	1 946	- 827
Short-term Financing - loans			0	0
Long-term Financing - own reserves			0	0
Long-term Financing - loans			0	0

Note: Operating Expenditures do not include debt service

Exhibit 3  
Schedule of Debt Service for City X  
Credit from SEF in Amount of 21 million Kc  
(All amounts in thousands of Kc)

Year	Principal Outstanding, Beginning of Period	Scheduled Principal Payments	Scheduled Interest Payments (3% p.a.)	Scheduled Total Debt Service	Outstanding Principal, End of Period
1998	12,000		180.0	180	12,000
1999	21,000	3,000	585.0	3,585	18,000
2000	18,000	3,000	495.0	3,495	15,000
2001	15,000	3,000	405.0	3,405	12,000
2002	12,000	3,000	315.0	3,315	9,000
2003	9,000	3,000	225.0	3,225	6,000
2004	6,000	3,000	135.0	3,135	3,000
2005	3,000	3,000	45.0	3,045	0

Exhibit 4  
Schedule of Debt Service for City X  
Proposed Bank Loan of 20 million Kc  
(All amounts in thousands of Kc)

Year	Principal Outstanding, Beginning of Period	Scheduled Principal Payments	Scheduled Interest Payments (13% p.a.)	Scheduled Total Debt Service	Outstanding Principal, End of Period
1998	7,000		455.0	455	7,000
1999	20,000	2,000	2,470.0	4,470	18,000
2000	18,000	2,000	2,210.0	4,210	16,000
2001	16,000	2,000	1,950.0	3,950	14,000
2002	14,000	2,000	1,690.0	3,690	12,000
2003	12,000	2,000	1,430.0	3,430	10,000
2004	10,000	2,000	1,170.0	3,170	8,000
2005	8,000	2,000	910.0	2,910	6,000
2006	6,000	2,000	650.0	2,650	4,000
2007	4,000	2,000	390.0	2,390	2,000
2008	2,000	2,000	130.0	2,130	0

Exhibit 5  
Schedule of Debt Service for City X  
Consolidated Debt Service for SEF Loan and Bank Loan  
(All amounts in thousands of Kc)

Year	Principal Outstanding, Beginning of Period	Scheduled Principal Payments	Scheduled Interest Payments	Scheduled Total Debt Service	Outstanding Principal, End of Period
1998	19,000	0	635	635	19,000
1999	41,000	5,000	3,055	8,055	36,000
2000	36,000	5,000	2,705	7,705	31,000
2001	31,000	5,000	2,355	7,355	26,000
2002	26,000	5,000	2,005	7,005	21,000
2003	21,000	5,000	1,655	6,655	16,000
2004	16,000	5,000	1,305	6,305	11,000
2005	11,000	5,000	955	5,955	6,000
2006	6,000	2,000	650	2,650	4,000
2007	4,000	2,000	390	2,390	2,000
2008	2,000	2,000	130	2,130	0

Exhibit 6  
Selected Financial Data for City X  
(All amounts in thousands of Kc)

	Actual Results			Budget
	1995	1996	1997	1998
<b>National Tax Revenues</b>				
Income Tax of natural persons from dependent activity	9 109	5 192	5 809	6 200
Income Tax of natural persons from business	16 137	10 812	9 003	10 300
Corporate Income Tax	0	5 147	4 662	4 800
<b>Total National Tax Revenues</b>	<b>25 246</b>	<b>21 151</b>	<b>19 474</b>	<b>21 300</b>
<b>State Operating Subsidies</b>				
Total General Subsidies	3 140	3 077	3 493	3 440
<b>Local Revenues</b>				
Revenues from own activities and property lease	3 692	4 109	4 701	5 804
Property Tax	1 194	1 252	1 006	1 000
Administrative Fees	1 219	1 281	1 434	950
Local Fees&Environmental Fees	196	274	352	1 109
Interest&Penalties	63	213	202	1 580
<b>Total Local Revenues</b>	<b>6 364</b>	<b>7 129</b>	<b>7 695</b>	<b>10 443</b>
<b>Total Recurring Revenues</b>	<b>34 750</b>	<b>31 357</b>	<b>30 662</b>	<b>35 183</b>
<b>Operating Expenditures</b>				
-Salaries and other personnel expenses	5 590	6 030	8 834	9 440
-Other Expenditures	13 855	15 667	15 487	15 423
Operating Subsidies to Contributory Organizations and other Firms	861	914	1 104	1 000
Other Operating Expenditures	0		3 871	731
<b>Total Operating Expenditures</b>	<b>20 306</b>	<b>22 611</b>	<b>29 296</b>	<b>26 594</b>
Net Operating Surplus (NOS)	14 444	8 746	1 366	8 589
Debt Service				635
Debt Service Coverage Ratio (NOS/DS)				13.53



Exhibit 7  
Projections of Selected Financial Data for City X  
(All amounts in thousands of Kc)

	Projected Data									
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
<b>National Tax Revenues</b>										
Income Tax of natural persons from dependent activity	6 696	7 232	7 810	8 435	9 110	9 839	10 626	11 476	12 394	13 385
Income Tax of natural persons from business	10 300	10 300	10 300	10 300	10 300	10 300	10 300	10 300	10 300	10 300
Corporate Income Tax	4 896	4 994	5 094	5 196	5 300	5 406	5 514	5 624	5 736	5 851
<b>Total National Tax Revenues</b>	<b>21 892</b>	<b>22 526</b>	<b>23 204</b>	<b>23 931</b>	<b>24 709</b>	<b>25 544</b>	<b>26 439</b>	<b>27 400</b>	<b>28 430</b>	<b>29 537</b>
<b>State Operating Subsidies</b>										
Total General Subsidies	3 440	3 440	3 440	3 440	3 440	3 440	3 440	3 440	3 440	3 440
<b>Local Revenues</b>										
Revenues from own activities and property lease	5 978	6 157	6 342	6 532	6 728	6 930	7 138	7 352	7 573	7 800
Property Tax	1 300	1 300	1 800	1 800	1 800	1 800	1 800	1 800	1 800	1 800
Administrative Fees	950	950	950	950	950	950	950	950	950	950
Local Fees&Environmental Fees	1 109	1 109	1 109	1 109	1 109	1 109	1 109	1 109	1 109	1 109
Interest&Penalties	1 580	1 580	1 580	1 580	1 580	1 580	1 580	1 580	1 580	1 580
<b>Total Local Revenues</b>	<b>10 917</b>	<b>11 096</b>	<b>11 781</b>	<b>11 971</b>	<b>12 167</b>	<b>12 369</b>	<b>12 577</b>	<b>12 791</b>	<b>13 012</b>	<b>13 239</b>
<b>Total Recurring Revenues</b>	<b>36 249</b>	<b>37 062</b>	<b>38 425</b>	<b>39 342</b>	<b>40 317</b>	<b>41 353</b>	<b>42 457</b>	<b>43 631</b>	<b>44 882</b>	<b>46 216</b>
<b>Operating Expenditures</b>										
-Salaries and other personnel expenses	9 912	10 408	10 928	11 474	12 048	12 651	13 283	13 947	14 645	15 377
-Other Expenditures	15 886	16 362	16 853	17 359	17 879	18 416	18 968	19 537	20 124	20 727
Operating Subsidies to Contributory Organizations and other Firms	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000
Other Operating Expenditures	753	776	799	823	847	873	899	926	954	982
<b>Total Operating Expenditures</b>	<b>27 551</b>	<b>28 545</b>	<b>29 580</b>	<b>30 656</b>	<b>31 775</b>	<b>32 939</b>	<b>34 150</b>	<b>35 411</b>	<b>36 722</b>	<b>38 086</b>
Net Operating Surplus (NOS)	8 698	8 517	8 845	8 686	8 542	8 414	8 306	8 220	8 160	8 129
Debt Service	8 055	7 705	7 355	7 005	6 655	6 305	5 955	2 650	2 390	2 130

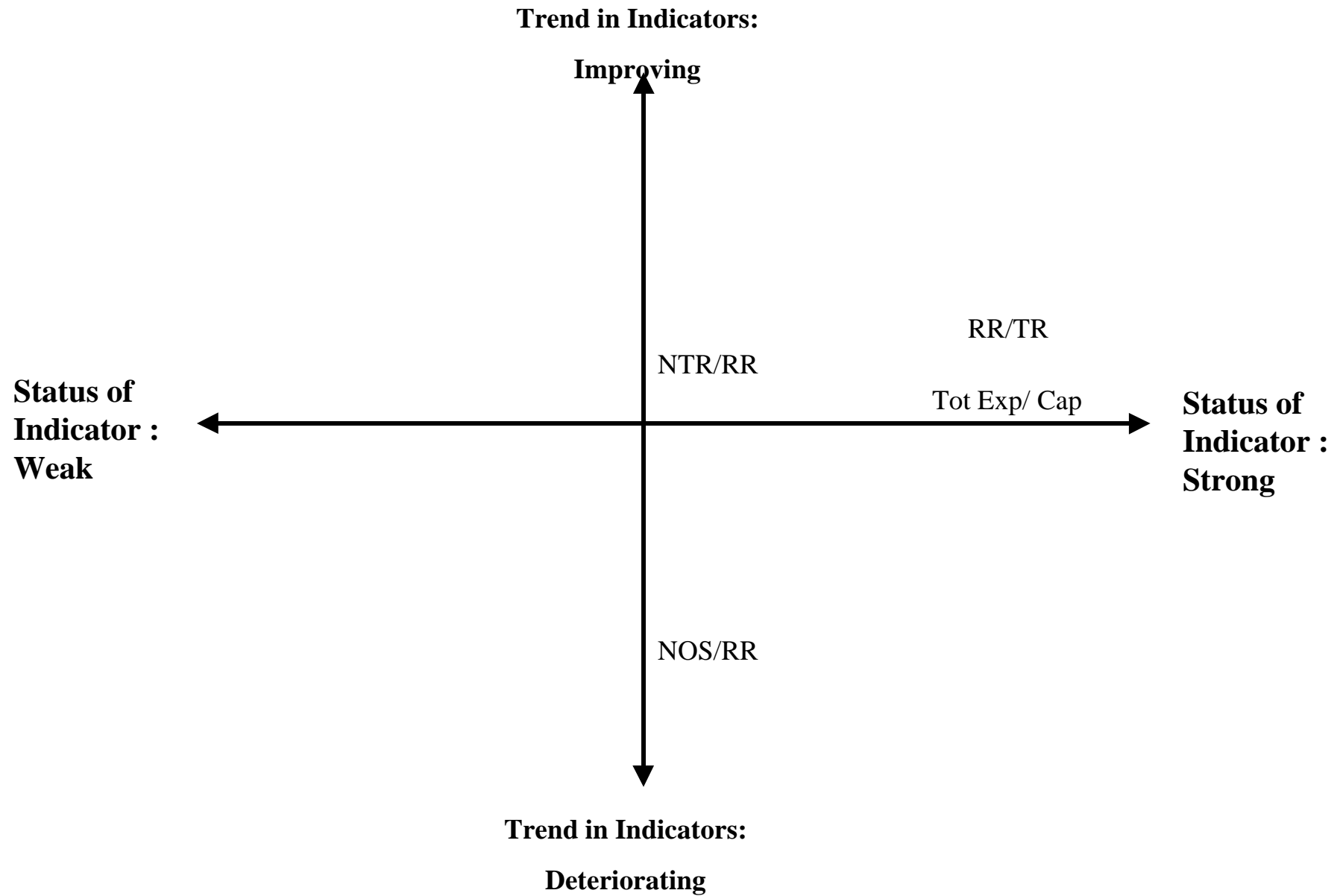
**Worksheet #1**  
**Summary Measures of City X Financial Performance**  
**Based on Actual (1995-1997) and Budget Data (1998)**

	Actual 1995	Actual 1996	Actual 1997	Budget 1998
Key Revenue Indicators:				
1 Recurring Revenues/Total Revenues	63.6%	81.7%	92.8%	71.9%
2 National Tax Revenues/Recurring Revenues	72.7%	67.5%	63.5%	60.5%
3 Local Revenues/Recurring Revenues	11.6%	18.6%	23.3%	21.3%
4 Property Sales/Total Revenues	14.9%	0.0%	4.2%	4.6%
5 Net Operating Surplus/Recurring Revenues	41.6%	27.9%	4.5%	24.4%
Key Spending Indicators				
6 Total Expenditures per Capita	9 995	10 082	7 607	10 455
7 Total Operating Expenditures per Capita	4 414	4 915	6 369	5 781
8 Debt Service/Recurring Revenues	-	-	-	1.8%
9 Debt Service/Total Revenues	-	-	-	1.3%
10 Debt Service Coverage Ratio (NOS/DS)	-	-	-	13.53

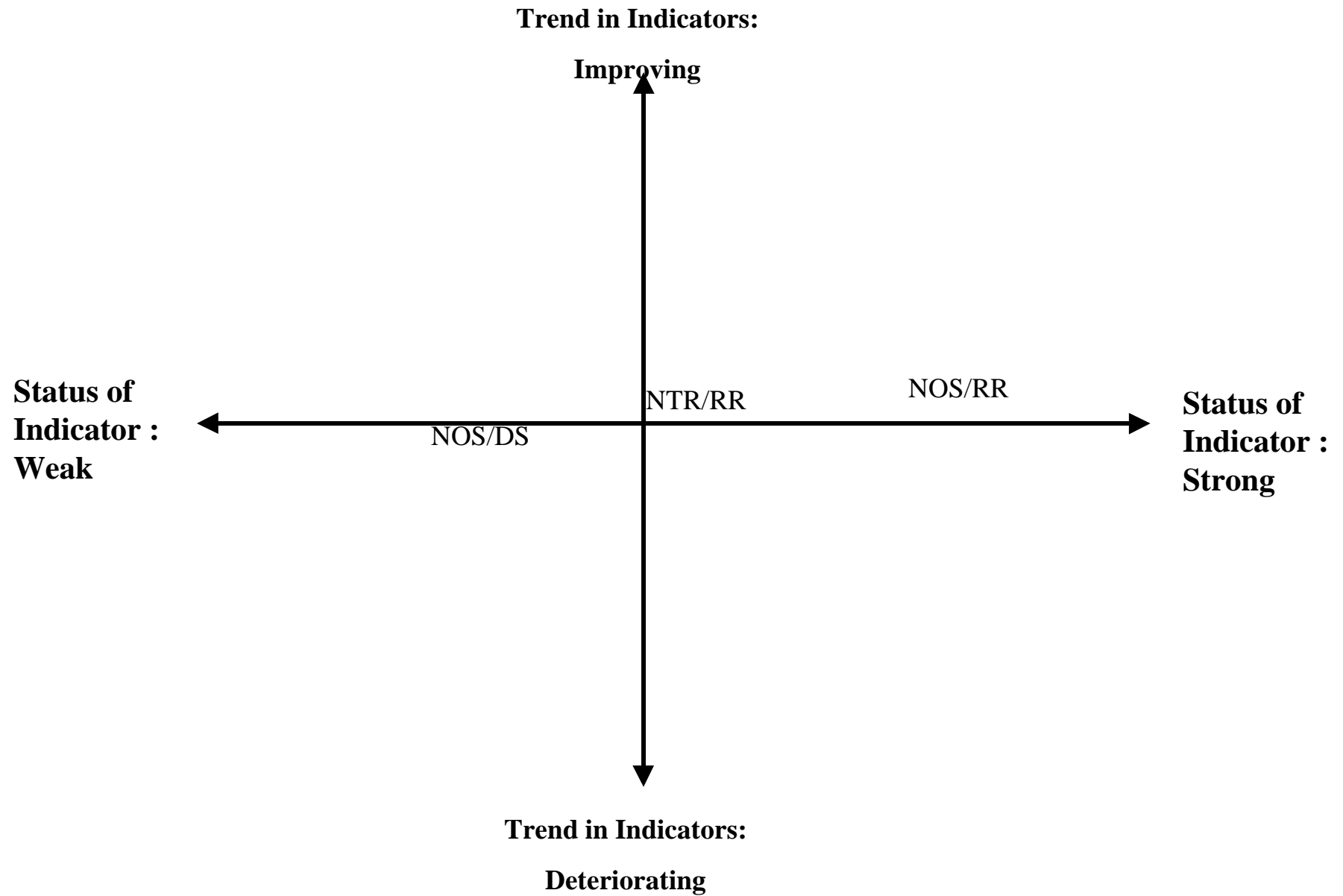
**Worksheet #2 (Presenter's Version)**  
**Summary Measures of City X Financial Performance**  
**Based on Projections of Selected Financial Data, 1999-2005**

		Projected Data									
		1999	2000	2001	2002	2003	2004	2006	2006	2007	2008
Key Revenue Indicators:											
1	Recurring Revenues/Total Revenues	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2	National Tax Revenues/Recurring Revenues	60.4%	60.8%	60.4%	60.8%	61.3%	61.8%	62.3%	62.8%	63.3%	63.9%
3	Local Revenues/Recurring Revenues	30.1%	29.9%	30.7%	30.4%	30.2%	29.9%	29.6%	29.3%	29.0%	28.6%
4	Property Sales/Total Revenues	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
5	Net Operating Surplus/Recurring Revenues	24.0%	23.0%	23.0%	22.1%	21.2%	20.3%	19.6%	18.8%	18.2%	17.6%
Key Spending Indicators											
6	Total Expenditures per Capita	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
7	Total Operating Expenditures per Capita	5 989	6 206	6 430	6 664	6 908	7 161	7 424	7 698	7 983	8 280
8	Debt Service/Recurring Revenues	22.2%	20.8%	19.1%	17.8%	16.5%	15.2%	14.0%	6.1%	5.3%	4.6%
9	Debt Service/Total Revenues	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
10	Debt Service Coverage Ratio (NOS/DS)	1.08	1.11	1.20	1.24	1.28	1.33	1.39	3.10	3.41	3.82

## A Risk Assessment Matrix for City X, 1997



## A Risk Assessment Matrix for City X, 1999



## **TEACHING AND PRESENTATION NOTES FOR THE CITY X CASE STUDY**

Small groups of participants will use City X as a case study for analysis and discussion of municipal credit and bank lending. These teaching notes serve only as a guide for the discussions and the comments are structured according to the exhibits in the case.

At the outset, the seminar leader may find it appropriate to provide 30-45 minutes for the participants to simply read through the materials. Participants are also required to complete Worksheet #2 by calculating the ratio of debt service to recurring revenue (#8) and the debt service coverage ratio (#10). Appended to these teaching notes is a completed version of Worksheet 2 with these ratios included.

The objectives of the small group breakout sessions are (1) to develop a thorough analysis of the credit strengths and weaknesses of City X, and (2) to determine, on the basis of the available information, whether to recommend lending to City X. Equally important, the smaller breakout sessions are designed to encourage individuals to participate in the discussion. After the breakout sessions (which generally extend for 2 ½ hours) each group reconvenes the full seminar for presentations. The presentation is structured to answer the following questions:

- What are the specific credit strengths and weaknesses of City X ?
- Based on the available information, would you recommend lending to City X ?
- Are there specific conditions or covenants that you would require if you were to lend to City X ?

Different groups may arrive at different conclusions, and this is in fact a desirable outcome.

### **NARRATIVE AND EXHIBIT 1**

The narrative and the accompanying schedule of investment in Exhibit 1 raise several points. First, it is clear that the project is an essential-purpose project. Some may question the size and scope (is it too big?) This can be used to discuss information that banks could request in order to judge the feasibility of the project , including:

- ! The concepts of construction period/completion risk, and steps that can mitigate these (such as the requirement for a feasibility study by an independent consultant, and fixed-price, turnkey construction contracts.
- ! The use of independent engineers to monitor construction progress and/or operations after plant completion.

- ! It can also be noted from Exhibit 1 that the city is planning to spend 18 million Kcs on this project in 1998 from its own sources . Later on, this can be recalled to highlight the importance of the city's budgets and forecasts.

## EXHIBIT 2

This exhibit (perhaps in conjunction with Exhibit 6) can be used to highlight key aspects of the past financial performance for City X. Among the factors to note:

- The decline in total revenues from 1995 to 1997
- The decline in total tax revenues from 1995 to 1997
- The changing proportions of different tax revenues
- The continued increases in operating expenses
- The sharp jump in salaries in 1997
- The sharp increases in total revenues, and in tax revenues for 1998
- The large percentage increases in local fees and in penalties for 1998
- The continued increase in salaries for 1998
- The projected decline in total operating expenses for 1998
- The sharp jump in investment expenditures (Note: this would increase by 31 million Kcs if the proposed SEF and bank loans were approved)

## EXHIBITS 3-5

These exhibits simply list the annual debt service requirements if the SEF and bank loans are approved. Among the issues that can be discussed:

- ! There will be a very large debt service expense beginning in 1999, and continuing through 2008.
- ! Questions may be raised concerning the priority of the SEF loan or bank loan in the event that City X cannot meet all debt service obligations. Does either loan have a senior standing in this event, or are both loans on a parity?
- ! Other questions may be raised concerning collateral requirements (Note: Although the seminar will provide opportunities to discuss collateral requirements, the strong emphasis is on lending based solely on future revenues).



## EXHIBIT 6

- ! The focus of this exhibit is on the recent changes in net operating surplus (NOS) from 1995 to 1997 and the extraordinary increase expected from the 1998 budget.
- ! The NOS declined by more than 90%, from 14,444 to 1,366 between 1995 and 1997. This decline was due to a significant fall in recurring revenues from 34,750 to 30,662.
- ! Also contributing was a very large increase in total operating expenditures.
- ! The trends in components of recurring revenues and expenses can also be reviewed.
- ! The 1998 budget anticipates a very large increase in the NOS, based on a 15% increase in recurring revenues and a 9% cut in operating expenses. Participants may well question whether the city can turn around its recent trends.
- ! It is especially important to link the 1998 budget with the projections in Exhibit 7 and Worksheet 2.

## EXHIBIT 7

- ! This exhibit needs to be reviewed along with the budget data for 1998 from Exhibit 6.
- ! The key points are that after budgeting for rather large increases in recurring revenues in 1998, the projections assume modest 3%-4% increases in recurring revenues and in total tax revenues.
- ! Moreover, after forecasting a decline in total operating expenses for 1998, the projections assume that expenses will increase by 4% in 1999 and thereafter.
- ! A question could be raised as to the reasonableness of these projections. For example, many revenues and expenses are likely to increase by the rate of inflation — is a 3%-4% inflation rate reasonable for the future?
- ! The projections also assume that the net operating surplus will be stable, in the range of 8.2-8.7 million Kcs. Since the projections for 1999 and thereafter use very low rates of growth, it is clear that most of the jump in NOS from 1997 is planned on the budget for 1998.



- ! Some participants might use different assumptions regarding the growth rate of specific revenue or expense items. This can be an opportunity to talk about the computer program that will be presented after the case studies.

## WORKSHEET 1

- ! The discussion of this worksheet can first focus on the 1995-1997 period, since the results are actual results for this period. It may also be useful to relate the key indicators to the risk assessment table and matrix used in City A. Appended to these notes is a risk assessment matrix for those items available in 1997 for City X.
- ! The first ratio – recurring revenues to total revenues is strong by reference to the benchmarks used for city A, and it improved from 1995 to 1997.
- ! The ratio of national tax revenues to recurring revenues is in the acceptable range for 1997, and since this ratio declined from 1995, this indicator has improved.
- ! However, the ratio of net operating surplus to recurring revenues, while in the acceptable range for 1997, has deteriorated from 1995.
- ! Total spending per capita in 1997 is low, and therefore strong. Spending also decreased, which is a favorable trend.
- ! The attached risk assessment matrix Seminar leaders can choose whether or not to use the attached risk assessment matrix. If it is used, the placement of the indicators is subjective, and participants may well place the available indicators in a different location. However, regardless of the specific location, there is little justification for placing any of the four available indicators in the weak category based on 1997 performance.

## WORKSHEET 2

- ! The most notable items in Worksheet 2 are the debt service ratios. (A presenter's version is attached with the ratios calculated.)
- ! The ratio of debt service to recurring revenues is very high in 1999 and remains high until 2006. This suggests that the loan may be risky.



- ! The debt service coverage ratio is very low, at 1.08, in 1999 and it remains below 1.25 until 2003. Again, this suggests that the loan is risky.
- ! Most important, perhaps, is the fact that underlying these ratios is the assumption that the net operating surplus will grow to more than 8 million Kcs in 1998, and remain at that level for the future. Thus, the ratio of net operating surplus to recurring revenues is projected to exceed 20% in 1999 through 2004.
- ! I have included a risk assessment matrix for 1999, but this is not especially meaningful in this case.
- ! The critical factor in this credit analysis is the ability of the city to achieve the revenue growth and expenditures projected for 1998. If the current budget is not met, then the city will have lower net operating surplus. This means, in turn, that the city will have fewer funds to contribute to the project. As a result, there is a risk that the city may need to borrow even more to complete this project on time.
- ! A shortfall in 1998 or 1999 net operating surplus also increases the risk of payments difficulties on debt service obligations.
- ! I have included a risk assessment matrix for 1999, but this is not especially meaningful in this case.
- ! The participants may wish to consider other loan requirements that would help mitigate these risks. For example, it may be desirable to restructure the loan terms to provide an interest-only period of, say, 1-2 years, with any NOS during this period required to be deposited in a sinking fund for debt repayment. It may also be appropriate to require the city to meet a target debt service coverage ratio of, say, 1.15 times, by cutting spending or raising revenues to meet the target. Participants may suggest other covenants that could mitigate the risks of this loan, or they may simply conclude that it is too risky.